Sustainable Telecentres? Two Cases from India

by

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Abstract

The telecentre movement is gaining momentum in the developing world as governments and donor agencies turn their attention to the digital divide. Telecentres are seen as community resources that offer access to information and communication technologies for inducing development among marginalised populations with little hope of otherwise participating in the benefits of the information revolution that the developed world is now enjoying. Whilst promising outcomes are emerging, most telecentre initiatives in Asia are still experimental and are supported by agencies external to the communities they serve. Stakeholders and observers frequently question the sustainability of telecentres, especially those in rural areas where telecommunications and electricity are problematic and expensive. With the vast majority of Asians living in rural communities, telecentre sustainability becomes a critical concern for connecting them to the wired world. Yet sustainability in development has multiple dimensions. This paper briefly examines the concept of sustainability and highlights the key aspect of financial sustainability for telecentres in the context of two case studies from India. Conclusions indicate that financial sustainability for development oriented telecentres appears possible under specified conditions.

Introduction

Telecentres provide public access to Information and Communication Technologies (ICTs) for educational, personal, social and economic development. There are numerous examples of telecentres throughout the developing world. For example, the Canadian government's International Development Research Center (IDRC) supports many typical telecentre projects in Africa (the ACACIA Project) and in Asia (the Pan Asia Network) (IDRC). Individual telecentres have been shown to foster profound developmental outcomes within the communities they serve. Despite promising indicators from a number of pilot telecentre projects, the question of sustaining any successes that emerge always arises.

Discussions of telecentre activities frequently make reference to sustainability (Whyte, 1999). Development discourse in general is laden with the need for sustainability, yet the concept of sustainability is rarely examined closely nor is it related to the specific development activity that is being discussed. There seems to be a requirement that development telecentres must be financially self-sustaining in order to remain in existence, a condition that appeals to common sense. Yet

despite the encouraging examples of beneficial outcomes from some telecentres, the development community is still unclear with regard to the conditions that are required for telecentre success as well as to the wider relationship between ICTs and rural development (Harris, 2001).   In this paper we describe two telecentre implementations that have targeted sustainability from the outset by providing information that customers will pay for.

Sustainability

The concept of sustainability in development can be traced back to a 1987 report by the World Commission on Environment and Development (WCED, 1987), known as the Brundtland Report:

> "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development focuses on improving the quality of life for all of the Earth's citizens without increasing the use of natural resources beyond the capacity of the environment to supply them indefinitely".

Sustainability discourse has since extended beyond issues relating to the irreversible depletion of the environment and the inevitable exhaustion of finite natural resources. Sustainability in development is now more widely regarded as the ability of a project or intervention to continue in existence after the implementing agency has departed, a condition that often has little to do with environmental protection or with the preservation of natural resources. Nevertheless, in view of the seemingly common occurrence of project breakdowns after the departure of the implementing agent, sustainability in terms of continuity has become a key indicator of success with development activities as well as an important criterion in pre-implementation planning for obtaining funds. In many cases, the sustainability of development projects focuses on the single question, "who will pay for the project after the implementing agent departs?" A popular response is for project implementers to design interventions that will generate sufficient income so that they will pay for themselves, where the role of the implementing agent is to provide seed inputs, including, but not limited to capital, that will get the project started and enable it to continue under its own impetus after the implementer departs.

Yet sustainability is not limited to the need of development to pay for itself. The International Institute for Sustainable Development lists three underlying common characteristics of sustainable development:

- Concern for equity and fairness   ▪ Long-term view   ▪ Systems thinking

These dimensions of sustainability reach outside the initial issues relating to the protection of the environment and to the replenishment of natural resources. Concerns for fairness and equity reflect the need for the benefits of development to reach those who are the least privileged, the least endowed with resources and the most vulnerable, something that development efforts often fail to achieve. The long-term view encompasses the apprehension that planners often hold for the unexpected and undesirable outcomes of development efforts as well as the tension that emerges between implementers with short-term project orientations and beneficiaries with long-term process considerations. For example, building a bridge is a short-term project, whereas crossing the river is a long-term process. Systems thinking in sustainability engenders multi-dimensional perspectives, the identification of feedback loops and the consideration of the consequences of actions, acknowledging the complexity of social life everywhere and the inter-relatedness of everything.

The sustainability of telecentres has emerged as a key issue in the debate surrounding the use of ICTs for development. In most cases, the discussion refers to financial self-sustainability, which is often regarded as a condition for continued existence of the centre. However, experience from telecentre experiments suggests that four types of sustainability exists for telecentres:

- Sustaining financial viability (Hudson, 1999).
- Sustaining staff capability (Baark and Heeks, 1998).
- Sustaining community acceptance (Whyte, 1999).
- Sustaining service delivery (Colle and Roman).

Financial viability refers to the capacity that a telecentre has for generating sufficient income to cover its costs of operation, and/or the cost of initially establishing it.   Whilst this ability to pay for itself generally requires the derivation of revenue directly from those who use the services of the telecentre, it does not preclude the possibility of other continuing sources of revenue, for instance, from government (Hudson, 1999).   Projects that introduce new skills also need to maintain the sustainability of the capabilities that are created. This will be ensured only to the extent that trained people, or their trained replacements, continue to work in the same area and that their capabilities are maintained and utilized. Sometimes, trained staff discover a better market for their skills and are lured away from the project (Baark and Heeks, 1998).

It is well to note that a telecentre's sustainability will be determined by the degree of acceptance by the community that it is able to generate. The introduction of a community telecentre, if it is successful, is going to have a major impact on the community; its culture, communication patterns, economy, social structure and future development.   If telecentres are seen as technological providers rather than social and cultural community centres, experience suggests they will be less sustainable. The degree of community involvement in, and commitment to, a telecentre, is often assumed to be a success factor and measures of user behaviour and perceptions are at the heart of any evaluation of telecentres (Whyte, 1999).

Sustaining service delivery relates to the continuation of flows of information that communities find useful and useable. But it also relates to sustaining the overall services of a telecentre in terms of adapting to evolving community needs, proactively seeking new sources of useful information and alerting the community to the value of information. Colle and Roman suggest strategies for telecentre implementations that foster sustainability of telecentre service delivery, including; having local champions or innovators to mobilise others to accept the vision of a telecentre, raising awareness about information and ICTs as a valuable resource for individuals, families, organisations and communities, and focusing on information services rather than on technology to build a local institution that is fully woven into the fabric of the community.

Telecentre sustainability shines a spotlight on the issue of sustainability in development as it embodies many of the dimensions of the sustainability theme as it has evolved since first coming to the attention of development practice. Of these dimensions, financial sustainability of telecentres might be argued to be the most critical or even the most difficult to achieve. Despite the plummeting cost-power ratio of computers, their price typically remains many orders of magnitude beyond the average annual incomes of telecentre users in developing countries. Therefore, the cases in this paper are described from the perspective of financial sustainability. In addition, financial sustainability warrants special attention because of the reassurance required by governments that telecentres will result in net benefits and will not become a drain on resources.

The following sections describe two case studies that were conducted by the authors in India, during December 2001 and January 2002. The authors visited each project headquarters in Hyderabad, Andrha Pradesh and in Thiruvananthapuram, Kerala.   They further visited two telecentre installations in each location and interviewed both the staff and telecentre users.

Case One. Samaikya Agritech P. Ltd., Andhra Pradesh.

Andhra Pradesh is India's fifth largest state, in both population and size. The State has a widely diversified farming base with a rich variety of cash crops. Agriculture provides for about 50% of the income of the State and provides the livelihood of 70% of the population. Most of the State suffers low and erratic rainfall, with an annual average of 125 cms. Samaikya Agritech P. Ltd was incorporated in 1999 and started operations in June 2000. *Samaikya* means "coming together for a good cause" in Telugu, the language of Andhra Pradesh. The company operates 18 "Agritech Centres" in five districts in Andhra Pradesh. The centres provide agricultural support services to farmers, on a commercial basis.

Samaikya Agritech Centre, Choutkur Village, Medak Distri ct, Andhra Pradesh

Samaikya's Agritech Centres are permanently manned by qualified agricultural graduates called Agricultural Technical Officers (ATO) and are equipped with computers linked to the head office in Hyderabad, through a modem to modem telephone connection. Through these centres Samaikya provides:

- technical assistance to member farmers
- inputs such as seeds, fertilisers and pesticides
- machinery hire
- tools and spares for sale soil and

- water analyses
- field mapping
- weekly field inspections
- field visits by specialists weather monitoring

Farmers register with centres and pay a fee per growing season (two or three seasons per year) of Rs.150 (about US$3) per acre/crop. A farmer registers by the field and receives support services that are specific to the fields registered. On registration, the farmer provides detailed information concerning his farming activities, which is held on the centre's database and which provides the basis for the technical support provided. The centre in the village of Choutkur has 53 registered farmers covering 110 acres of registered land. This is out of a total of around 1,000 farmers within the centre's catchment area. Major crops include sugar cane, padi and pulses.

Registered farmers receive technica l information in support of their farming activities. Advice from the centres is based on data generated from pre-validated crop cultivation practices adopted in the State and provided by the government agricultural services and local institutions. Farming information is up-linked from headquarters to the computers at the centres. If farmers have specific needs for information that cannot be satisfied immediately by the ATO at the centre, then the ATO completes an on-line enquiry form on the computer and transmits this via modem to the

headquarters.   The database and information systems are operated in the English language. Information is interpreted for the farmer by the ATO. As some farmers are illiterate, the ATOs have to spend time with explanations and descriptions. There is no standard for a computerised Telegu script. Specialists with more experience and qualifications at the headquarters organise and co-ordinate replies to queries, which are typically transmitted back to the centre within 24 hours. Prior to setting up a centre, Samaikya performs a survey of local farming and cultivation practices and to ascertain the political and cultural context of the potential centre. It conducts a pre-launch programme to familiarise farmers with the services. One centre closed down within three months of opening as no farmers registered for the service. This was due to the pressure placed on them by local marketeers, financiers and suppliers of inputs who perceived a threat to their livelihoods from the competing Samaikya services. Farmers were told that any who registered with the centre would not receive credit or essential supplies.

Samaikya Agritech P. Ltd has invested about five million rupees (US$106,000) in the agri-centre programme. At the end of 2001, the company had slightly more than 1,200 registered farmers. The company expects the programme to finance itself within in the next two years (2002/3).   The programme was conceived as a self-financing, profit-making activity from the outset. Its purpose is to maintain a sustained service of agricultural assistance to farmers.

Commentary

Samaikya Agritech P. Ltd. is run for a profit, demonstrating the value of information that farmers are ready to pay. For Samaikya to remain in business, the farmers it serves will have to be satisfied that the value of the services they receive represents a worthwhile expense. By remaining in operation, Samaikya will demonstrate that development information can be sold and that a potential source of revenue exists for telecentres that provide information services that its customers are prepared to pay for.

As a commercial concern, Samaikya respects the demands of its customers. Transactions are conducted on a supplier to customer basis because the company knows that if its customers are not satisfied with its service then they will discontinue their patronage. The exchange sits in marked contrast to a typical exchange with a government official in India.

The directors of Samaikya recognise the potential that their network of computerised centres has for supplying additional information-based services.   One opportunity is currently under development with the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT), which will entail the development and implementation of an information system for mitigating the effects of drought. It will include the collection and transmission of micro-climate data at the Samaikya centres.

Case Two. Keltron Information Kiosks, Kerala.

The State of Kerala lies along India's south-west coastline. A wet tropical climate and coastal lowlands support cultivation of rice, coconuts, tapioca and spices. The interior hills produce rubber, coffee and tea. One of India's most densely populated States; it has the highest literacy rate in India, but suffers from economic underdevelopment and unemployment. India's first communist state administration was elected in Kerala in 1957 and a communist coalition has been elected three times since.

Keltron is the Kerala State Electronics Development Corporation Ltd. It operates the Keltron Information Kiosks (KIKs), which are being implemented throughout the State. Keltron is wholly owned by the Kerala State government, but operates as separate company. The concept of the KIKs grew out of the State government's experiences with a bill-payment service called FRIENDS, (Fast, Reliable, Instant, Efficient, Network for Disbursement of Service). FRIENDS operates as a one-stop service centre equipped with computers for paying bills by the public as well as for obtaining applications and remitting registration fees. The FRIENDS kiosks:

- open from 7:00 a.m. to 7:00 p.m., seven days a week
- operate a computer-controlled orderly queuing system
- present a clean and attractive environment for the public
- do not charge for their services
- serve over one million people annually.

As yet, the FRIENDS centres are not networked. The main centre in Thiruvananthapuram, the State capital, serves 600 people and takes Rs.15 lakhs (US$32,000) a day. There is a FRIENDS centre in every district in Kerala.

Arising from the FRIENDS experience, Keltron is now developing information kiosks (telecentres) for public access to the internet. The initial objective is to facilitate delivery of government services using ICTs. The Kiosks will experiment with various ownership models for telecentre sustainability. Ownership options vary from State Government ownership to local Government ownership and to private ownership. There are currently three kiosks in Thiruvananthapuram, and two more are being implemented in rural districts, expected to open in March 2002. The village panchyats (local (councils) will operate these two new centres. In addition, five village panchyats have applied formally to operate Kiosks and all the panchayats in one district of Kottayam have expressed their interest to apply. The Kiosks will function as independent profit centres.

Keltron Information Kiosk, Thiruvananthapuram, Kerala, India

The Thiruvananthapuram kiosk operates a 64kbps leased line with 20 terminals, 12 of which are connected to the internet at December 2001. The centre provides public internet access to around 50 people daily, charges Rs.25 per hour and has daily revenues around Rs. 1,400. Trained staff are on hand to provide assistance. In addition to public internet use, the kiosk is implementing a series of government of government information systems for:

- for agriculture support, covering crops and pests
- census data, with summaries and the official list of people below the poverty line
- the electoral role

- a grievance reporting and tracking system with facilities for email to ministers
- industry information, on a variety of licensing, regulatory and support schemes.

The information systems are in the English language. The centre opens from 8:00 a.m. to 12:00p.m, 7 days a week. Plans are in hand to develop further applications for:

- e-education
- income certificates
- domicile certificates
- caste certificates
- local e-mail
- employment news

The Kerala State government expects the Kiosks to provide a mix of e-government services with locally developed community-based services. Keltron will provide the hardware as well developing the gateway to the e-government services. The local partner provides accommodation and staffing. Centres are expected to be self-sustaining from their own revenue from fee-paying customers as well as from advertisements and from other services, such as computer training, for which customers will pay. By mid-2002, a kiosk in the Tirurangadi Panchayat in Mallapuram district was ready for inauguration. By giving permission to the Panchayat to participate in the project, the Local Adminstration Department of the State Government has opened the door for other Panchayats to follow. Also, Keltron were surveying the State to assess the demand for investment in kiosks by private individuals and the State Bank of Travancore along with the Small Industries Development Bank of India had shown interest in funding youths interested in taking up the kiosks as self employment ventures. It is expected that wide deployment of the kiosks will generate a new engine of growth for the State (Kumar 2001).

Commentary

Kerala has a culture of education, literacy and egalitarianism. Moreover, the government deliberately fosters local responsibility and decision-making by allocating a large proportion (one third) of its budget directly to Panchayats as opposed to the more usual process in other States of State authorities retaining spending power over services and development. These contextual factors seem to be compatible with the concept behind the Keltron kiosks; more open government through a public/private partnership. Additionally, the State enjoys a high level of connectivity and the local language newspaper has the highest circulation of any newspaper in India, indicating an interest in information.

The State government recognises the need for financial sustainability, but also acknowledges the value that the public places on e-government services from its experiences with the FRIENDS system. There is no massive plan for the entire Kerala State government administration to go on-line, but an orderly role out of the kiosks is seen as a catalyst for increasing levels of service-driven ICT-based innovation in government departments. The Kiosks are not subsidized. They are a separate strategic business unit of Keltron and are required to generate revenue of their own.

The State sees the diffusion of Kiosks as a movement that will gradually and simultaneously sensitise both government and the public to the benefits of electronic service delivery as well as fostering an environment conducive to the development of other public information services. By organising the kiosk programme through a separate, though wholly owned, entity, the Government appropriates the flexibility it needs to innovate and experiment with new approaches to service delivery whilst retaining the leverage of its ownership of public information. By offering partnerships to the private sector, and to Panchayats, the Government achieves several advantages. It is able to marshal external resources in support of e-government diffusion and it ensures that the need for sustainability is factored into Kiosk implementation at the early stages.

Discussion

The cases demonstrate two approaches to telecentre-induced development, both of which rely heavily on financial sustainability. In both cases, the need to generate income and to show a profit has been built into the centres right from the start. Samaikya Agritech is a privately owned and purely commercial organization. It provides development assistance, but it exploits the opportunity provided by alternative providers of such assistance (especially government) whose service is significantly inferior.   The organization demonstrates that farmers will pay for information that helps them make more income. The technology component of the Samaikya enterprise only exists in support of its strategy to deliver useful information in a timely fashion to its clients. The strategy achieves financial sustainability by charging fees that are sufficient to cover costs and to yield a profit to the owners of the enterprise. Sustainability of staff capability is achieved through its employment practices, by engaging young graduates from agricultural colleges who need field experience. Community acceptance is sustained insofar as client farmers both continue to pay in order to register their fields and crops and they register more fields and crops. Service delivery is sustained though effective employment practices both at the centres and in the headquarters, where more specialised and experienced staff handle advanced queries, and through the close relationships that field staff develop with their client farmers.

In the case of the Keltron centres, the entire enterprise is built around the need for Keltron to stand alone financially, despite being wholly owned by the Kerala State Government. The information services that are being developed are designed as fee-paying services from the start, where they have been piloted in order to demonstrate the viability of such an approach.   The plan for proliferation of the centres is based on joint investments with the private sector and with local Panchayats in order to foster appropriate conditions for their financial viability.   Sustaining staff capability remains the role of local investors, but is encouraged through the revenue generating activities that will emerge from effective and skilful marketing of information services that will be necessary in order to achieve profits.   Community acceptance will also be fostered through effective outreach programmes, but as the basic government information services have been piloted, sufficient knowledge is available to point to the high likelihood of host communities accepting the services of the centres. Sustainability of service delivery is assured by the state government's commitment to the programme, its actions to computerise key aspects of government and its interface with the public and by the support it provides to Keltron as an independent and for - profit enterprise.

Arising from the discussion of the case studies, the following observations can be made:

- The delivery of development assistance using ICTs represents a business proposition.
  As agricultural and government information can be provided in return for fees, it seems possible that other classes of information (health, education, cultural) might similarly provide opportunities for generating revenue.

- The profit motive fosters a customer-oriented, demand-driven approach to development.
  The customer-orientation that is necessary for successful business enterprises fosters services that are closely aligned to client needs. Bottom up, demand driven approaches to development are commonly preferred to top-down, supply driven approaches. The profit motive contains in-built mechanisms that foster demand driven development.

- People will pay for government information services.

Governments are not always aware of the customer convenience or the potential for value addition that telecentres might offer to their citizenry. They do not always consider that such benefits represent income opportunities.

- Public/private partnerships offer potential for financially sustainable telecentres.
  In public/private telecentre enterprises, the public body takes responsibility for the social development role of the telecentre and the private body ensures its financial sustainability. It should be acceptable, for instance, to use the charges made for sending and receiving e-mail messages to subsidise the delivery of community health and agricultural extension programmes.

- Contextual issues have an impact on achieving sustainability with telecentres.
  We have seen how the implementation, and the sustainability, of the two cases are closely aligned with their contexts; the business opportunity represented by the latent demand for agricultural information on the part of the farmers in Andhra Pradesh, and the state government's commitment to better citizen services in Kerala. In both cases, the profit motive was at the forefront and was an integral component of the initial planning and implementation strategy.

- Government services can be a "pump-primer" for sustainable telecentres capable of offering other information services.
  All governments sit on vast sources of potentially useful information, easy access to which can represent income-generating opportunities. By sharing these opportunities with telecentre operators, governments can kick-start information infrastructures that can be made capable of inducing community development in other areas such as education, health, enterprise development, cultural enrichment and so on.

Conclusions

Financial sustainability of telecentres is a major concern for ICTs in development. Although financial sustainability is only one of several dimensions of telecentre sustainability, it remains the most questioned and possibly the most problematic. The cases indicate that by targeting financial sustainability at the outset, telecentres stand a good chance of surviving the honeymoon start up period during which the other dimensions of sustainability often prevail, i.e. community and service sustainability. By achieving financial sustainability early in their lives, telecentres build a sound foundation upon which further services of unknown viability can be tested. In particular, the achievement of the State government of Kerala indicates that any developing country can begin planning for e-government services. However, evidence from the field suggests that supporting telecenters exclusively by government grants is not a good sustainability formula, financially or politically (Colle and Roman). However, telecenters need to be demand-driven, and demand should be reflected in the community's willingness to pay for some services. Public/private partnerships in telecentres for development offer the opportunity for combining innovation and responsiveness with stability and public participation and for bringing massive numbers of excluded people into the information world.

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